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PATENT APPLICATION

of

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for

JUVENILE VEHICLE SEAT CUP HOLDER

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JUVENILE VEHICLE SEAT CUP HOLDER

Background and Summary

The present application relates to a juvenile vehicle seat and particularly to a juvenile vehicle seat having a cup holder movable between a retracted position and an extended position.

Conventional juvenile vehicle seats are generally known and are in relatively widespread use. It is desirable to provide a juvenile vehicle seat including a cup holder movable between a retracted position and an extended position.

According to the present disclosure, a juvenile vehicle seat is provided including a seat bottom and a seat back and a cup holder movable relative to the seat bottom. The cup holder is movable between a retracted position adjacent the seat bottom and an extended position spaced from the seat bottom.

In an illustrative embodiment, the cup holder includes a cup retainer or article receiver coupled to a connector or connecting member. A first portion of the connector cooperates with a second portion of the seat bottom or a base for the seat bottom to inhibit movement of the cup holder from at least one of the retracted and extended positions.

In another illustrative embodiment, the juvenile vehicle seat base is configured to releasably couple to the seat bottom. The base provides a receptor or aperture to receive the connector. The base includes engagement edges that cooperate with the connector to inhibit movement of the cup holder from at least one of the retracted and extended positions.

In another illustrative embodiment, the connector provides surfaces to engage the engagement edges of the base. One or more flexible tabs provide the surfaces so that when a user applies sufficient force to move the cup holder toward the extended position or the retracted position the tabs flex to disengage the surfaces from the edges. The tabs and surfaces thereon are configured to cooperate with the base or seat bottom to inhibit movement of the cup holder until a deliberate and sufficient force is applied to move the cup holder.

In still another illustrative embodiment, while in the retracted position, the cup holder is spaced apart from the seat bottom by a first distance. In the extended position the cup holder is spaced apart from the seat bottom by a second distance. The second distance is greater than the first distance. The second distance is sufficient so that the cup holder, when in the extended position, can accommodate cups or other articles having dimensions that would not be accommodated by the cup holder in the retracted position.

Additional objects, features, and advantages of the present application will become apparent to those of ordinary skill in the art upon consideration of the following detailed description of preferred embodiments exemplifying the best mode of carrying out the subject matter of this application as presently perceived.

Brief Description of the Drawings

The detailed description particularly refers to the accompanying figures in which:

Fig. 1 is a perspective view of a juvenile vehicle seat having a seat back, a seat bottom coupled to the seat back, a base coupled to the seat bottom, and a movable cup holder engaging the base;

Fig. 2 is a perspective view of a portion of the juvenile vehicle seat of Fig. 1 showing the cup holder in an extended position;

Fig. 3 is a perspective view of a portion of the juvenile vehicle seat of Fig. 1 showing the cup holder positioned for assembly;

Fig. 4 is a front view of a portion of the juvenile vehicle seat of Fig. 1 showing the cup holder in the extended position;

Fig. 5 is a sectional view of the juvenile vehicle seat of Fig. 1 taken along line 5-5 of Fig. 3 showing the cup holder in a retracted position, showing the connector engaging the base;

Fig. 6 is a sectional view of the juvenile vehicle seat similar to Fig. 5 showing the cup holder in a position between the retracted and extended positions;

Fig. 7 is a sectional view similar to Fig. 5 showing the cup holder in the extended position; and

Fig. 8 is a sectional view of a portion of the juvenile vehicle seat of

Fig. 1 taken along line 8-8 of Fig. 7.

Detailed Description of the Preferred Embodiments

As shown in Fig. 1, a juvenile vehicle seat 10 includes a seat bottom 12 and a seat back 14 extending from seat bottom 12. Illustratively, a base 16 is releasably coupled to an underside of seat 10 and is adapted to rest on a vehicle seat or other support surface (not shown). Juvenile vehicle seat 10 further includes a cup holder 18 movable relative to seat bottom 12 or base 16 between a retracted position as shown in Fig. 5 and an extended position as shown in Fig. 7.

Cup holder 18 includes a cup retainer or article receiver 20 and a connector or connecting member 22 extending from cup retainer 20. As shown in Figs. 3 and 5-7, connector 22 includes a first portion 26 for engaging base 16. First portion 26 cooperates with base 16 to inhibit removal of connector 22 from base 16 and to inhibit movement of cup holder 18 from the retracted and extended positions.

As shown in Fig. 3, base 16 includes a front 28, a rear 30, and a pair of sides 32, 34. Base 16 further includes a seat connector 36 for releasably coupling seat bottom 12 to the base. Base 16 provides a receptor or aperture 38 to receive connector 22 of cup holder 18 and permit sliding movement of connector 22 relative to base 16. Although certain embodiments are disclosed herein as including base 16, it is within the scope of this disclosure to incorporate the features described herein as being part of base 16 into the seat bottom or other portion of juvenile vehicle seat 10.

Referring now to Figs. 4-7, first portion 26 of connector 22 is configured to cooperate with a second portion 40 of base 16. Second portion 40 includes first and second retainer engaging portions 42, 44 for engaging connector 22. Illustratively, first retainer engaging portion 42 provides a first opening or notch 46 providing inner and outer engagement edges 48, 50 that cooperate with connector 22 to inhibit movement of cup holder 18 from the extended position. Second retainer engaging portion 44 provides a second opening 52 providing a third engagement edge 54 to cooperate with connector 22 to inhibit movement of cup holder 18 from the retracted position and to inhibit removal of cup holder 18 from base 16. Although in illustrative embodiments base 16 includes first and second retainer engaging portions 42, 44, a single retainer engaging portion inhibiting movement of the cup holder is

within the scope of this disclosure. Additionally, although retainer engaging portions 42, 44 have been illustrated as including first and second openings 46, 52 providing engagement edges 48, 50, 54, other known structures cooperating with connector 22 to inhibit movement of cup holder 18 are within the scope of this disclosure. For example, cup holder 18 could include a structure to interact with the seat bottom or base to provide friction or other forms of contact to inhibit movement of the cup holder.

As shown in Fig. 3, connector 22 provides first and second openings 56, 58 each providing a connection edge 60. First portion 26 of connector 22 includes first and second retainers 62, 64 having first and second tabs 66, 68 respectively, each tab being cantilevered to one of connection edges 60. As shown in Figs. 5-7, first tab 66 provides a detent 70. Illustratively, detent 70 has a curved surface. Also as shown in Figs. 5-7, second tab 68 provides a catch 72 having a sloped surface 74 and a stop surface 76.

As shown in Fig. 4, when cup holder 18 is in the extended position, cup retainer or article receiver 20 is spaced apart from base 16 and seat bottom 12 by a distance 84 greater than when cup holder 18 is in the retracted position. In an illustrative embodiment, distance 84 is about two inches. However, it is within the scope of this disclosure for distance 84 to be other lengths. Distance 84 is illustratively sufficient in length so that cup retainer 20, when in the extended position, can accommodate cups or other articles having dimensions that would not be accommodated by the cup holder in the retracted position.

In the retracted position shown in Fig. 5, cup retainer 20 is proximate or adjacent side 32 of base 16. In this position, catch 72 and detent 70 are positioned in second opening 52. When a user applies force to cup holder 18 in a direction 80, detent 70 engages third engagement edge 54 of opening 52 to inhibit movement of cup holder 18 from the retracted position toward the extended position.

Referring to Fig. 6, as a user applies a force sufficient to move cup holder 18 in direction 80 from the retracted position toward the extended position, the curved surface of detent 70 moves against third edge 54 until first tab 66 flexes and detent 70 disengages third edge 54. As a user continues to slide cup holder in

direction 80, detent 70 moves against a bottom surface of second retainer engaging portion 44.

As a user moves cup holder 18 to the extended position shown in Fig. 7, detent 70 snaps into first opening or notch 46. In this position, detent 70 is adjacent inner and outer edges 48, 50 of first opening 46. Also as shown in the extended position of Fig. 7, catch 72 is adjacent third edge 54 of second opening 52. When cup holder 18 is in the extended position, as a user applies force in direction 80 to cup holder 18, detent 70 and stop surface 76 engage outer edge 50 and third edge 54 respectively, inhibiting removal of connector 22 and cup holder 18 from base 16. As a user applies force in direction 82 to cup holder 18, detent 70 engages inner edge 48, inhibiting movement of cup holder 18 from the extended position toward the retracted position.

To insert cup holder 18 into base 16, a user inserts connector 22 into receptor 38. As the user moves cup holder 18 toward the retracted position, catch 72 slides along an underside of base 16. Sloped surface 74 facilitates insertion of connector 22 by the user by reducing resistance in sliding catch 72 past inner edge 48.

As illustrated in Fig. 8, connector 22 includes left and right downwardly extending guides 110, 112. Base 16 includes left and right guide supports 120, 122. Each of guide supports 120, 122 includes a generally upwardly facing support surface 128. In operation, as shown in Figs. 5-7, guides 110, 112 slide on support surface 128 thereby maintaining first portion 26 of cup holder 18 in the proper position to engage second portion 40 of base 16.

Illustratively, as shown in Fig. 3, a console 88 is coupled to side 32 and includes a platform 90 and a container 92. Platform 90 is adjacent to receptor 38 and is sized to receive cup retainer 20. As shown in Figs. 5-7, platform 90 illustratively provides additional support to cup holder 18 by supporting cup retainer 20 when cup holder 18 is in the retracted position, and by supporting at least a portion of cup retainer 20 or connector 22 when cup holder 18 is between the retracted and extended positions. When cup holder 18 is in the extended position, platform 90 supports connector 22. Platform 90 and container 92 are illustratively shaped so that the outer surface contours of cup holder 18 appear to continue the contours of the outer surfaces

of platform 90 and container 92. These shapes provide the appearance that the cup holder is an integral part of the base when the cup holder is in the retracted position.

Although this application has described detail with reference to certain preferred or illustrative embodiments, variations and modifications exist within the scope and spirit of the invention as described and defined in the following claims.